

claimed combination or suggested modification, the 103 rejection of claim 1 is unfounded. Therefore, a *prima facie* case of an obviousness rejection cannot be made out. Accordingly, Applicants respectfully request the Examiner to reconsider withdrawal of this rejection, making claim 1, and claims dependent therefrom patentable over the *Liu* reference.

In the *Liu* reference, there is no motivation either to have the device located in the same integrated circuit in which the analog-to-digital converter is located. Not only does the *Liu* reference even remotely teach or suggest the ADSL modem as claimed in claim 1, there is no device that is provided within the integrated circuit for reducing the higher data rate data from the analog-to-digital converter located within the same integrated circuit. As a result, the multiplexed lower data rate data and control information need not be transmitted by the multiplexer externally of the integrated circuit.

The Examiner states in the Office Action dated October 3, 2002, on page 3 that "a decimation filter is required in the receive path in Figure 2B (Sheet 2), containing said A/D converter 213, to produce lower data rate for said link SDATA_IN in Figure 1A and an interpolation filter is required in the transmit path in Figure 2B (Sheet 2), containing a D/A converter 213, to increase the sampling rate of data received on SDATA_OUT in Figure 1A to support faster DSL mode in *Liu*'s invention. Furthermore, the Examiner contends that a multiplexer is required in the receive path in Figure 2B (Sheet 2), containing said A/D converter 213, for multiplexing data and control words and transmitting said multiplexed data out on SDATA_IN in Figure 1A."

However, the Applicants respectfully disagree with the Examiner. By merely providing the device on a physically separated circuitry section (for example, within the DSL modem digital circuit 230) or providing the multiplexer out of the integrated circuit (e.g., external to the DSL modem analog circuit 205), the lower data rate data multiplexed with control information cannot be transmitted between two integrated circuits at a relatively lower data rate. This may result in significantly more buffering at each integrated circuit and large number of pins to connect. Instead, the asymmetric digital subscriber loop modem claimed in claim 1 may allow data to be shared between integrated circuits more efficiently.

The Examiner has taken the prior art Figure 1A of the *Liu* reference out of context. The *Liu* reference in its entirety, in fact, makes no suggestion that the *Liu* reference teaches the claimed invention or addresses the problem solved by the claimed invention in claim 1, or appreciates its advantages. The Examiner does not provide a specific citation or any evidence from the cited reference that would suggest to person of ordinary skill in the art to make the modification to the prior art Figure 1A of the *Liu* reference to transmit multiplexed lower data rate data and control information externally to the

integrated circuit, as claimed in claim 1, regardless of whether such modification of the *Liu* reference can sustain a rejection under Section 103 as suggested. Moreover, the *Liu* reference, either alone or in combination with the prior art Figure 1A teachings, does not suggest the desirability of locating the device with the analog-to-digital converter within the integrated circuit to implement the ADSL modem of claim 1. Without such a provision for the device, the question of providing a multiplexer that multiplexes the lower data rate data and control information for transmission external of the integrated circuit does not arise in the *Liu* reference.

At least for the same reasons as set forth above in the context of claim 1, independent claim 14 and the claims dependent therefrom are not rendered obvious by the *Liu* reference. The Examiner is respectfully requested to reconsider the rejection of independent claim 14 and the associated dependent claims as they are in condition for allowance. With regard to the rejection of claims 11-13 further in view of *Cheng*, the combination or a modification based on inadequate teachings of the *Liu* reference with the *Cheng* reference fails to render obvious the claims 11-13 under § 103. Moreover, the teachings of the *Liu* and *Cheng* references cannot be combined, absent some reason in the cited art to do so. The mere fact that the modem of the *Liu* reference could be modified based on hindsight to produce the subject matter of claims 11-13 would not make the modification obvious, absent any suggestions or the desirability of such combination. Even if the combined, the combination of the *Liu* and *Cheng* references do not result in the limitations of the rejected claims 11-13. Pertaining to other rejected dependent claims, to the extent that characterizations of the cited references of Applicants' claimed subject matter are not specifically or adequately addressed, it is to be understood that the Applicants do not acquiesce to such characterizations. The Examiner is respectfully requested to reconsider the pending claims.

In view of these remarks, the application is now in condition for allowance and the Examiner's prompt action in accordance therewith is respectfully requested.

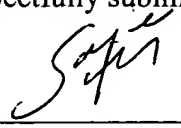
Respectfully submitted,

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